

WHAT IS CLAIMED IS:

1. A software updating method for a network apparatus in a network system connecting a plurality of network apparatuses, comprising:

a step of one network apparatus connected to a network acquiring system information of software installed in other network apparatuses;

a step of acquiring generation information of system update modules from the system update modules, the system update modules being possessed by the other network apparatuses and used for updating software of the other network apparatuses;

a step of obtaining optimum update data necessary for optimizing software of each network apparatus connected to the network, by using generation information contained in the system information and the generation information of the system update modules; and

a step of acquiring system update modules containing the optimum update data from the network apparatuses having the optimum update data, and transmitting system update modules to a network apparatus necessary for optimizing the software to update the software by using the optimum update data.

2. A software updating method for a network apparatus in a network system connecting a plurality of network apparatuses, comprising:

a step of one network apparatus connected to

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a network acquiring system information from other network apparatuses, the system information containing system component information constituted of system component identification information and generation information of software installed in each of the other network apparatuses;

a step of acquiring system component identification information and generation information of system update modules from the system update modules, the system update modules being possessed by the other network apparatuses and used for updating software of the other network apparatuses;

a step of obtaining optimum update data necessary for optimizing software of each network apparatus connected to the network, by using the system information and the system component identification information and generation information of the system update modules; and

a step of acquiring system update modules containing the optimum update data from the network apparatuses having the optimum update data, and transmitting system update modules to a network apparatus necessary for optimizing the software to update the software by using the optimum update data.

3. A software updating method according to claim 1, wherein:

the software is optimized by updating the software to latest generation software by using the

system information and the generation information of the system update modules.

4. A software updating method according to claim 2, wherein:

the software is optimized by updating the software to latest generation software by using the system information and the system component identification information of the system update modules.

5. A software updating method according to claim 2, wherein:

the system information contains also apparatus function information made of function identification information describing hardware and software functions of each network apparatus;

the system update module also contains compatibility information between hardware and other software; and

the software is optimized by updating the software by further referring to the apparatus function information and compatibility information.

6. A software updating method according to claim 2, wherein:

the system update module also contains information for acquiring latest system update modules from an external network; and

the system update module is acquired also from the external network.

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7. A software updating method according to claim 2, wherein:

the software to be updated includes a plurality of components, the update data updates only some components of the software, and the system update module contains compatibility information between the update data and the other components of the software.

8. A software updating method according to claim 1, wherein:

when a new network apparatus is connected to the network, an update process for the software is executed.

9. A software updating method according to claim 2, wherein:

when a new network apparatus is connected to the network, an update process for the software is executed.

10. A software updating method according to claim 2, wherein:

the system information possessed by each network apparatus contains the last update date and time when the software was updated lastly; and

if the network has two or more network apparatuses capable of executing an update process for the software, the network apparatus having the latest last update date and time becomes a manager to execute the update process.

11. A software updating method according to claim

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1, wherein:

the system update module also contains an explanation statement of update contents; and

the explanation statement is presented to a user to allow the user to determine whether update is performed by using the system update module.

12. A network apparatus in a network system connecting a plurality of network apparatuses, wherein: system information of software installed in each network apparatus connected to a network is acquired from each network apparatus;

generation information of system update modules is acquired from the system update modules, the system update modules being possessed by each of other network apparatuses and used for updating software of the other network apparatuses;

optimum update data necessary for optimizing software of each network apparatus connected to the network is obtained by using generation information contained in the system information and the generation information of the system update modules; and

system update modules containing the optimum update data are acquired from the network apparatuses having the optimum update data, and the system update modules are transmitted to a network apparatus necessary for optimizing the software to update the software by using the optimum update data.

13. A network apparatus in a network system

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connecting a plurality of network apparatuses, wherein:

system information is acquired from each of the network apparatuses connected to a network, the system information containing system component information constituted of system component identification information and generation information of software installed in each of the network apparatuses;

system component identification information and generation information of system update modules are acquired from the system update modules, the system update modules being possessed by other network apparatuses and used for updating software of the other network apparatuses;

optimum update data necessary for optimizing software of each network apparatus connected to the network is obtained by using the system information and the system component identification information and generation information of the system update modules; and

system update modules containing the optimum update data are obtained from the network apparatuses having the optimum update data, and the system update modules are transmitted to a network apparatus necessary for optimizing the software to update the software by using the optimum update data.

14. A network apparatus according to claim 12, wherein:

the software is optimized by updating the software to latest generation software by using the system information and the generation information of the system update modules.

15. A network apparatus according to claim 13, wherein:

the software is optimized by updating the software to latest generation software by using the system information and the system component identification information of the system update modules.

16. A network apparatus according to claim 13, wherein:

the system information contains also apparatus function information made of function identification information describing hardware and software functions of each network apparatus;

the system update module also contains compatibility information between hardware and other software; and

the software is optimized by updating the software by further referring to the apparatus function information and compatibility information.

17. A network apparatus according to claim 12, wherein:

the software of the subject network apparatus is optimized by using the system update module.

18. A network apparatus according to claim 12,

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wherein:

the system update module is acquired also from a removable storage medium.

19. A network apparatus according to claim 12, wherein:

the system update module also contains information for acquiring a latest system update module from an external network and the system update module is acquired also from the external network.

20. A network apparatus in a network system connecting a plurality of network apparatuses, wherein:

the network apparatus has system information containing system component information constituted of system component identification information and generation information of software installed in the subject network apparatus, and a system update module to be used for updating software of the other network apparatuses; and

the system information and system update module are supplied to the other network apparatuses connected to a network, a system update module for optimizing the software of the subject network apparatus is received from the other network apparatuses connected to the network, and the software of the subject network apparatus is updated by using optimum update data contained in the system update module.

21. A network apparatus according to claim 20,



wherein:

the system update module contains authentication data; and

the optimum update data and corresponding authentication data are received, the optimum update data is authenticated by using the corresponding authentication data, and whether update is performed or not is determined by authentication results.

22. A network apparatus according to claim 20, wherein:

the system update module received from one of the other network apparatuses is presented to another of the other network apparatuses connected to the network.

23. A network apparatus according to claim 20, wherein:

the software to be updated has a plurality of separated components; and

the system update module updates only some components of the software, and the system update module contains compatibility information between the update data and the other components of the software.

24. A network apparatus according to claim 20, wherein:

information of a network apparatus having the system update module for optimizing the software of the subject network apparatus is received from the other network apparatuses connected to the network, and the

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subject network apparatus acquires the system update module.

25. A network system connecting a plurality of network apparatuses, wherein:

one network apparatus connected to a network acquires system information from other network apparatuses, the system information containing system component identification information and generation information of software installed in each of the other network apparatuses;

system component identification information and generation information of a system update module are acquired from the system update module, the system update module being possessed by each of the other network apparatuses and used for updating software of the other network apparatuses;

optimum update data necessary for optimizing the software of each network apparatus connected to the network is obtained by using the system information and the system component identification information and generation information of the system update module; and

system update modules containing the optimum update data are acquired from the network apparatuses having the optimum update data, and transmitted to a network apparatus necessary for updating the software to update the software by using the optimum update data.

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